



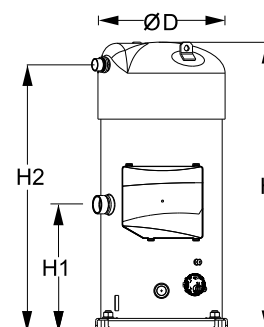
Datasheets

Danfoss scroll compressors **SM / SY / SZ / SH / WSH**



General Characteristics

Model number (on compressor nameplate)		SH300B4ABE
Code number for Singlepack*		120H0239
Code number for Industrial pack**		120H0240
Drawing number		8556090c
Suction and discharge connections		Brazed
Suction connection		1-5/8" ODF
Discharge connection		1-1/8" ODF
Oil sight glass		Threaded
Oil equalisation connection		2-1/4" Rotolock
Oil drain connection		1/4" flare
LP gauge port		Schrader
IPR valve		None
Reverse rotation protection		Electronic module
Swept volume	285,5 cm ³ /rev	
Displacement @ Nominal speed	49.7 m ³ /h @ 2900 rpm - 60.0 m ³ /h @ 3500 rpm	
Net weight	153 kg	
Oil charge	6,7 litre, POE - 160SZ	
Maximum system test pressure Low Side / High side	30 bar(g) / 45 bar(g)	
Maximum differential test pressure	37 bar	
Maximum number of starts per hour	12	
Refrigerant charge limit	13,5 kg	
Approved refrigerants	R410A	

Dimensions


D=333,2 mm

H=723 mm

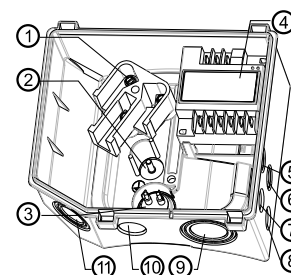
H1=331 mm

H2=664 mm

H3=- mm

Electrical Characteristics

Nominal voltage	380-400V/3/50Hz - 460V/3/60Hz
Voltage range	340-440 V @ 50Hz - 414-506 V @ 60Hz
Winding resistance (between phases) +/- 7% at 25°C	0.48 Ω
Rated Load Amps (RLA)	46.4 A
Maximum Continuous Current (MCC)	65 A
Locked Rotor Amps (LRA)	260 A
Motor protection	Electronic protection module, 115/230 V

Terminal box


IP54 (with cable gland)

- 1: Power connection, 3 x 4.8 mm (3/16")
- 2: Earth M5
- 3: Thermistor connector
- 4: Electronic protection module
- 5: Double knock-out Ø 22.5 mm (7/8") & Ø 16.5 mm (0.65")
- 6: Double knock-out Ø 22.5 mm (7/8") & Ø 16.5 mm (0.65")
- 7: Knock-out Ø 20.7 mm (0.81")
- 8: Knock-out Ø 20.7 mm (0.81")
- 9: Triple knock-out Ø 50.8 mm (2") & Ø 43.7 mm (1.72") & Ø 34.5 mm (1.35")
- 10: Knock-out Ø 25.5 mm (1.00")
- 11: Triple knock-out Ø 40.5 mm (1.59") & Ø 32.2 mm (1.27") & Ø 25.5 mm (1")

Recommended Installation torques

Oil sight glass	50 Nm
Power connections / Earth connection	3 Nm / 2 Nm
Mounting bolts	21 Nm

Parts shipped with compressor

Mounting kit with rigid grommets, bolts, nuts, sleeves and washers
Electronic protection module mounted in terminal box
Initial oil charge
Installation instructions

Approvals : CE certified, UL certified (file SA6873), -

*Singlepack: Compressor in cardboard box

**Industrial pack: 4 Unboxed compressors on pallet (order per multiples of 4)

Rotolock accessories, suction side
Code no.

Solder sleeve, P03 (2-1/4" Rotolock, 1-5/8" ODF)	8153006
Rotolock valve, V03 (2-1/4" Rotolock, 1-5/8" ODF)	8168026
Rotolock adapter (2"1/4 Rotolock, 1"5/8 ODF)	120Z0432
Gasket, 2-1/4"	8156133

Rotolock accessories, discharge side
Code no.

Solder sleeve, P02 (1-3/4" Rotolock, 1-1/8" ODF)	8153004
Angle adapter, C02 (1-3/4" Rotolock, 1-1/8" ODF)	8168005
Rotolock valve, V02 (1-3/4" Rotolock, 1-1/8" ODF)	8168028
Rotolock adapter (1-3/4" Rotolock, 1-1/8" ODF)	120Z0364
Gasket, 1-3/4"	8156132

Solder sleeve adapter set


- 1: Rotolock adapter (Suc & Dis)
 2: Gasket (Suc & Dis)
 3: Solder sleeve (Suc & Dis)
 4: Rotolock nut (Suc & Dis)

Rotolock accessories, sets
Code no.

Solder sleeve adapter set, (2-1/4" Rotolock, 1-5/8" ODF), (1-3/4" Rotolock, 1"1/8 ODF)	7765028
Valve set, V03 (2-1/4"~1-5/8"), V02 (1-3/4"~1-1/8")	7703383
Gasket set, 1-1/4", 1-3/4", 2-1/4", OSG gaskets black & white	8156013

Oil / lubricants
Code no.

POE lubricant, 160SZ, 1 litre can	7754023
POE lubricant, 160SZ, 2.5 litre can	120Z0571

Crankcase heaters
Code no.

Surface sump heater + bottom insulation, 56 W, 24 V, CE mark, UL	120Z0360
Surface sump heater + bottom insulation, 56 W, 230 V, CE mark, UL	120Z0376
Surface sump heater + bottom insulation, 56 W, 400 V, CE mark, UL	120Z0377
Surface sump heater + bottom insulation, 56 W, 460 V, CE mark, UL	120Z0378
Belt type crankcase heater, 75 W, 230 V, CE mark, UL	7773108
Belt type crankcase heater, 75 W, 400 V, CE mark, UL	7773118
Belt type crankcase heater, 75 W, 460 V, CE mark, UL	120Z0464

Miscellaneous accessories
Code no.

Electronic soft start kit, MCI 50 CM	7705009
Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	8156138
Acoustic hood for scroll compressor	120Z0022
Acoustic bottom insulation for scroll compressor	120Z0353
Discharge thermostat kit	7750009

Spare parts
Code no.

Electronic motor protection module, 115/230 V	8169016
Mounting kit for 1 scroll compressor including 4 hexagon rigid grommets, 4 sleeves, 4 bolts, 4 washers	7777045
Oil sight glass with gaskets (black & white)	8156019
Gasket for oil sight glass (white teflon)	8156129
Terminal box 210 x 190 incl. cover	120Z0458
T block connector 60 x 75 mm	8173021

Performance data at 50 Hz, EN 12900 rating conditions
R410A

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-25	-20	-15	-10	-5	0	5	10	15

Cooling capacity in W

30	26 690	33 314	41 069	50 102	60 562	72 595	86 351	101 976	119 620
35	24 940	31 304	38 727	47 357	57 341	68 829	81 967	96 903	113 786
40	-	29 210	36 258	44 441	53 907	64 805	77 282	91 486	107 565
45	-	27 014	33 643	41 336	50 240	60 505	72 278	85 706	100 938
50	-	-	30 863	38 022	46 322	55 910	66 935	79 544	93 886
55	-	-	-	34 481	42 133	51 002	61 236	72 982	86 390
60	-	-	-	-	37 655	45 761	55 160	66 001	78 431
65	-	-	-	-	-	40 168	48 690	58 582	69 991

Power input in W

30	13 360	13 548	13 722	13 897	14 087	14 308	14 575	14 902	15 305
35	14 773	14 961	15 133	15 304	15 489	15 702	15 959	16 274	16 663
40	-	16 549	16 718	16 884	17 061	17 265	17 511	17 813	18 186
45	-	18 345	18 509	18 668	18 837	19 031	19 264	19 551	19 908
50	-	-	20 538	20 690	20 849	21 030	21 249	21 521	21 860
55	-	-	-	22 979	23 127	23 296	23 500	23 754	24 073
60	-	-	-	-	25 705	25 859	26 046	26 282	26 581
65	-	-	-	-	-	28 752	28 922	29 138	29 415

Current consumption in A

30	26.26	26.48	26.63	26.77	26.94	27.19	27.58	28.14	28.93
35	27.88	28.16	28.35	28.51	28.67	28.89	29.22	29.71	30.40
40	-	30.07	30.31	30.49	30.65	30.86	31.14	31.56	32.17
45	-	32.25	32.55	32.77	32.95	33.14	33.40	33.76	34.29
50	-	-	35.14	35.40	35.61	35.80	36.03	36.35	36.81
55	-	-	-	38.44	38.68	38.88	39.10	39.38	39.78
60	-	-	-	-	42.21	42.44	42.65	42.91	43.26
65	-	-	-	-	-	46.52	46.74	46.99	47.30

Mass flow in kg/h

30	557	686	835	1 005	1 200	1 423	1 676	1 963	2 286
35	549	678	827	998	1 193	1 416	1 669	1 956	2 279
40	-	668	817	988	1 183	1 405	1 659	1 945	2 268
45	-	657	805	975	1 169	1 392	1 644	1 930	2 252
50	-	-	791	960	1 153	1 374	1 626	1 911	2 232
55	-	-	-	942	1 134	1 354	1 604	1 888	2 208
60	-	-	-	-	1 112	1 331	1 579	1 861	2 179
65	-	-	-	-	-	1 304	1 550	1 830	2 146

Coefficient of performance (C.O.P.)

30	2.00	2.46	2.99	3.61	4.30	5.07	5.92	6.84	7.82
35	1.69	2.09	2.56	3.09	3.70	4.38	5.14	5.95	6.83
40	-	1.77	2.17	2.63	3.16	3.75	4.41	5.14	5.91
45	-	1.47	1.82	2.21	2.67	3.18	3.75	4.38	5.07
50	-	-	1.50	1.84	2.22	2.66	3.15	3.70	4.29
55	-	-	-	1.50	1.82	2.19	2.61	3.07	3.59
60	-	-	-	-	1.46	1.77	2.12	2.51	2.95
65	-	-	-	-	-	1.40	1.68	2.01	2.38

Nominal performance at to = 5 °C, tc = 50 °C

Cooling capacity	66 935	W
Power input	21 249	W
Current consumption	36.03	A
Mass flow	1 626	kg/h
C.O.P.	3.15	

Pressure switch settings

Maximum HP switch setting	45	bar(g)
Minimum LP switch setting	1.5	bar(g)
LP pump down setting	2.3	bar(g)

Sound power data

Sound power level	82	dB(A)
With accoustic hood	76	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

All performance data +/- 5%

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Datasheet, performance data

Danfoss scroll compressor. SH300-4

Performance data at 50 Hz, ARI rating conditions

R410A

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-25	-20	-15	-10	-5	0	5	10	15

Cooling capacity in W

30	28 823	35 939	44 260	53 944	65 147	78 024	92 733	109 428	128 266
35	27 109	33 986	41 997	51 301	62 054	74 414	88 539	104 584	122 706
40	-	31 955	39 614	48 495	58 758	70 561	84 061	99 418	116 787
45	-	29 831	37 096	45 515	55 247	66 454	79 293	93 924	110 507
50	-	-	34 432	42 350	51 515	62 090	74 235	88 111	103 879
55	-	-	-	39 005	47 572	57 487	68 913	82 012	96 950
60	-	-	-	-	43 469	52 713	63 414	75 739	89 855
65	-	-	-	-	-	47 976	57 997	69 609	82 983

Power input in W

30	13 360	13 548	13 722	13 897	14 087	14 308	14 575	14 902	15 305
35	14 773	14 961	15 133	15 304	15 489	15 702	15 959	16 274	16 663
40	-	16 549	16 718	16 884	17 061	17 265	17 511	17 813	18 186
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60	-	-	-	-	25 705	25 859	26 046	26 282	26 581
65	-	-	-	-	-	28 752	28 922	29 138	29 415

Current consumption in A

30	26.26	26.48	26.63	26.77	26.94	27.19	27.58	28.14	28.93
35	27.88	28.16	28.35	28.51	28.67	28.89	29.22	29.71	30.40
40	-	30.07	30.31	30.49	30.65	30.86	31.14	31.56	32.17
45	-	32.25	32.55	32.77	32.95	33.14	33.40	33.76	34.29
50	-	-	35.14	35.40	35.61	35.80	36.03	36.35	36.81
55	-	-	-	38.44	38.68	38.88	39.10	39.38	39.78
60	-	-	-	-	42.21	42.44	42.65	42.91	43.26
65	-	-	-	-	-	46.52	46.74	46.99	47.30

Mass flow in kg/h

30	554	682	830	999	1 193	1 414	1 665	1 949	2 269
35	545	674	822	991	1 185	1 406	1 658	1 942	2 262
40	-	665	812	981	1 175	1 396	1 647	1 931	2 251
45	-	653	800	969	1 162	1 382	1 633	1 916	2 235
50	-	-	786	954	1 146	1 365	1 615	1 897	2 215
55	-	-	-	936	1 127	1 345	1 593	1 874	2 191
60	-	-	-	-	1 105	1 322	1 568	1 848	2 163
65	-	-	-	-	-	1 295	1 540	1 817	2 130

Coefficient of performance (C.O.P.)

30	2.16	2.65	3.23	3.88	4.62	5.45	6.36	7.34	8.38
35	1.84	2.27	2.78	3.35	4.01	4.74	5.55	6.43	7.36
40	-	1.93	2.37	2.87	3.44	4.09	4.80	5.58	6.42
45	-	1.63	2.00	2.44	2.93	3.49	4.12	4.80	5.55
50	-	-	1.68	2.05	2.47	2.95	3.49	4.09	4.75
55	-	-	-	1.70	2.06	2.47	2.93	3.45	4.03
60	-	-	-	-	1.69	2.04	2.43	2.88	3.38
65	-	-	-	-	-	1.67	2.01	2.39	2.82

Nominal performance at to = 7.2 °C, tc = 54.4 °C

Cooling capacity	75 152	W
Power input	23 320	W
Current consumption	38.82	A
Mass flow	1 716	kg/h
C.O.P.	3.22	

Pressure switch settings

Maximum HP switch setting	45	bar(g)
Minimum LP switch setting	1.5	bar(g)
LP pump down setting	2.3	bar(g)

Sound power data

Sound power level	82	dB(A)
With acoustic hood	76	dB(A)

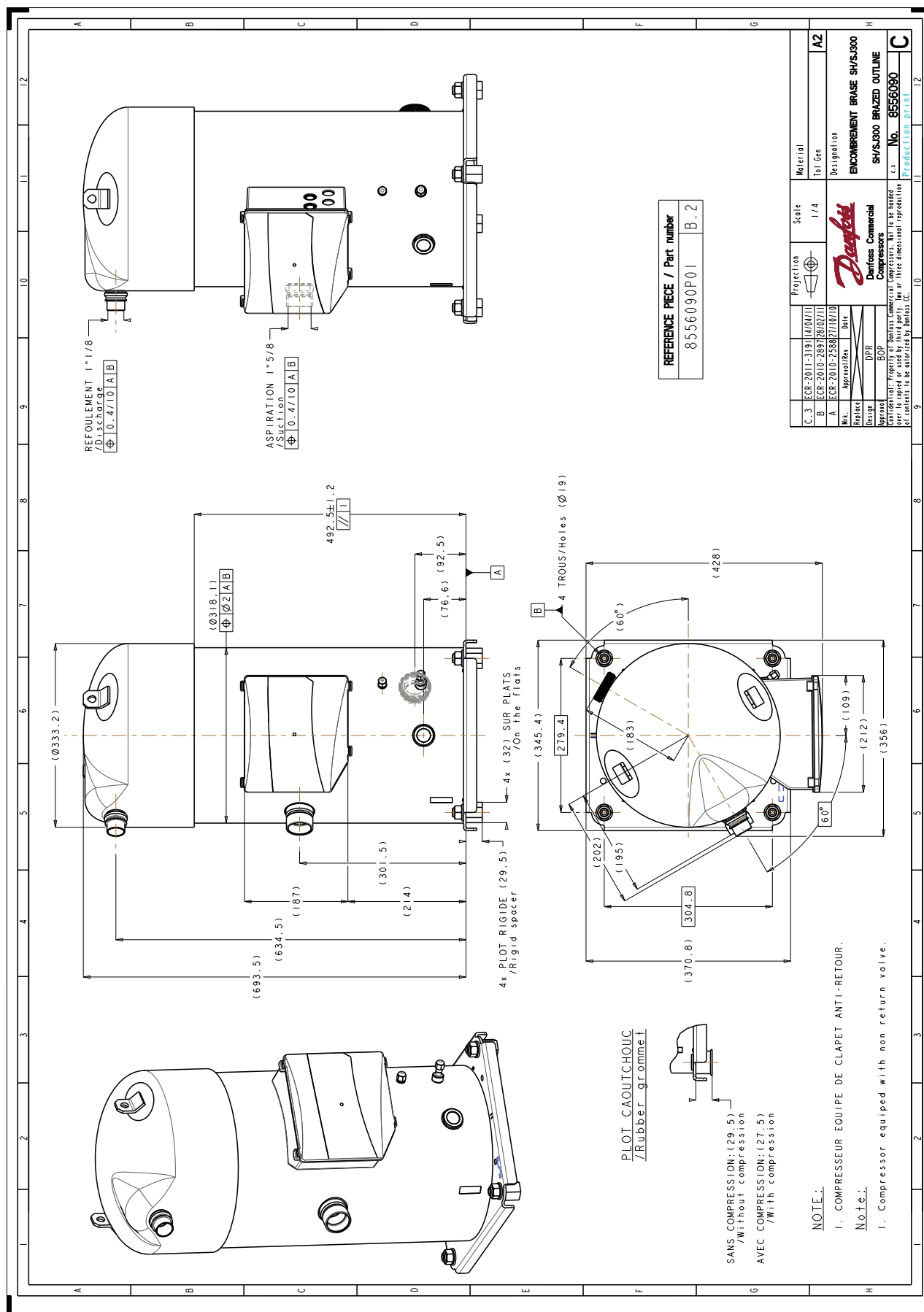
to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 11.1 K , Subcooling = 8.3 K

All performance data +/- 5%

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